What is claimed is:

1. An Electric Discharge Machining apparatus for machining a vehicle wheel surface comprising:

a dielectric fluidic bath;

an electrode submerged in said dielectric fluidic bath;

a movable support structure, said support structure adapted to support and rotate a vehicle wheel mounted upon said support structure in a position proximate said electrode: and

a power supply for applying a voltage to said electrode for machining a surface of the vehicle wheel.

2. The apparatus of Claim 1, wherein said electrode has a discharge surface, said discharge surface formed in a shape that is an inverse of a shape of a surface of the vehicle wheel.

3. The apparatus of Claim 2, wherein said power supply is a pulsed power supply.

4. The apparatus of Claim 2, wherein said discharge surface includes at least one projecting portion, said projecting portion including an intermediate flat portion for forming the surface of the vehicle wheel.

5. The apparatus of Claim 4, wherein said discharge surface is adapted to machine a tire beadseat on the vehicle wheel.

6. The apparatus of Claim 2, wherein said apparatus further includes a positioning control unit that is electrically connected to said movable support structure and operative to cause movement of said support structure.

7. The apparatus of Claim 6, wherein said apparatus further includes a current sensor, electrically connected between said power supply and said electrode and also electrically connected to said positioning control unit, said current sensor operative to provide said positioning control unit with a control signal that is a function of the magnitude of the current flow through the electrode and the vehicle wheel, said positioning control unit being responsive to said control signal to cause movement of said support structure.

8. The apparatus of Claim 6, wherein said apparatus further includes a spark sensor, electrically connected to said positioning control unit, said spark sensor operative to provide said positioning control unit with a control signal that is a function of the magnitude of the intensity of sparks generated between the electrode and the vehicle wheel, said positioning control unit being responsive to said control signal to cause movement of said support structure.

9. The apparatus of Claim 5 whereby said vehicle wheel is machined to have a beadseat having a radial runout between .0050 inches (.1270 Millimeters) and .0009 inches (.0229 Millimeters).

10. A method of machining a vehicle wheel comprising the following steps:

(a) providing an EDM apparatus, said EDM apparatus including a moveable support structure, the support structure including a spindle and the support structure being electrically connected to ground, the EDM apparatus further including an electrode having a discharge surface immersed in a

dielectric fluidic bath, the electrode having a shape that is an inverse of at least one wheel surface;

(b) mounting a vehicle wheel having an axis of rotation and an annular rim section having a rim surface coaxially disposed about the axis of rotation, upon the support structure;

(c) immersing the vehicle wheel in the dielectric fluidic bath;

(d) rotating the vehicle wheel in a first direction about the axis;

(e) applying a voltage to the electrode; and

(f) moving the vehicle wheel to a position proximate the electrode and generating at least one spark there between the electrode discharge surface and the wheel surface, such that the wheel surface is machined.

11. The method of Claim 10, wherein the vehicle wheel in step (b) is a forged wheel.

12. The method of Claim 10, wherein the vehicle wheel in step (b) is a cast wheel.

13. The method of Claim 10, wherein, prior to step (b), the vehicle wheel is initially machined by turning on a conventional wheel lathe.

14. The method of Claim 13, wherein the EDM apparatus includes a positioning control unit and further wherein during step (f) the positioning control unit is operative to cause the support structure to move the vehicle wheel.

15. The method of Claim 14, wherein during step (f) the vehicle wheel is moved into an initial position proximate the electrode relative to a set of predetermined vertical and horizontal coordinates.

16. The method of Claim 15, wherein the EDM apparatus further includes a current sensor connected between the electrode and a power supply, the power supply supplying the voltage to be applied to the electrode, and further wherein the method includes, after step (f), repositioning the vehicle wheel based upon a control signal provided by the current sensor, the control signal being a function of the magnitude of the current flow through the electrode and the vehicle wheel.

17. The method of Claim 16, wherein the method further includes, after repositioning the vehicle wheel, supplying current to the electrode until a predetermined time period elapses.

18. The method of Claim 17, wherein the method further includes further repositioning of the vehicle wheel while supplying current to the electrode.

19. The method of Claim 16, wherein the method further includes, after repositioning the vehicle wheel, supplying current to the electrode until the current flow falls below a predetermined magnitude.

20. The method of Claim 16, wherein the wheel surface is a beadseat.

21. The method of Claim 15, wherein the EDM apparatus further includes a spark sensor, the spark sensor operative to measure the intensity of sparks between the electrode and the vehicle wheel, and further wherein the method includes, after step (f), repositioning the vehicle wheel based upon a control signal provided by the spark sensor, the control signal being a function of the magnitude of the intensity of sparks generated.

22. The method of Claim 21, wherein the method further includes, after repositioning the vehicle wheel, further generating sparks until a predetermined time period elapses.

23. The method of Claim 22, wherein the method further includes, repositioning the vehicle wheel while generating sparks.

24. The method of Claim 21, wherein the method further includes, after repositioning the vehicle wheel, generating sparks until the spark intensity falls below a predetermined magnitude.

25. The method of Claim 21, wherein the wheel surface is a beadseat.

26. A method of machining a vehicle wheel comprising the following steps:

(a) forming a vehicle wheel having an axis of rotation and an annular rim section having a rim surface coaxially disposed about the axis of rotation;

(b) mounting the vehicle wheel upon an EDM apparatus, the EDM apparatus having a moveable support structure, the support structure including a spindle and the support structure being electrically connected to ground, the EDM apparatus further including an electrode having a discharge surface immersed in a dielectric fluidic bath, the electrode having a shape that is an inverse of at least one wheel surface;

(c) immersing the vehicle wheel in the dielectric fluidic bath;

(d) rotating the vehicle wheel in a first direction about the axis;

(e) applying voltage to the electrode; and

(f) moving the vehicle wheel to a position proximate the electrode and generating at least one spark there between the electrode discharge surface and the wheel surface, such that the wheel surface is machined.